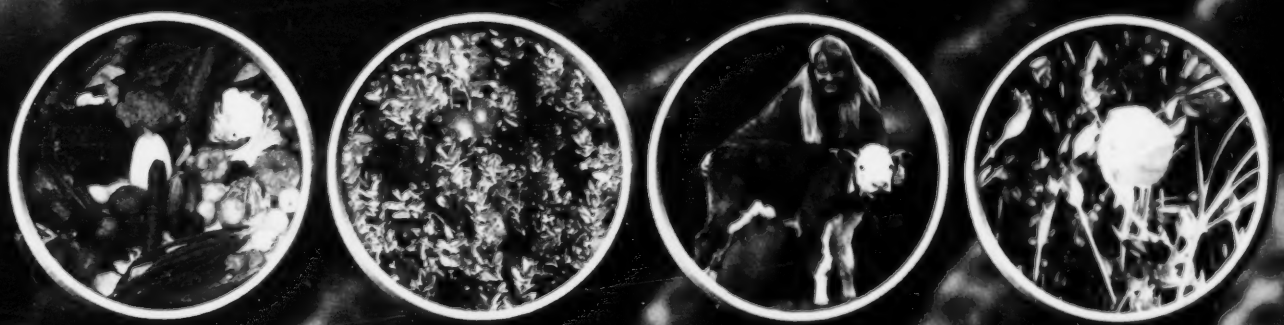
Prince Edward Island
CANADA

Agriculture Research Investment Fund Inc.

Annual Report
2003 to 2004



105-02812/

To the Honourable J. Léonce Bernard
Lieutenant Governor of Prince Edward Island

Sir:

I have the honour to submit herewith the 2003-2004 Annual Report of the Prince Edward Island Agricultural Research Investment Fund Inc.

I have the honour to be, Sir
Your obedient servant,

Honourable Kevin J. MacAdam, Minister
Agriculture, Fisheries, Aquaculture and Forestry

The Honourable Kevin MacAdam
Minister of Agriculture, Fisheries, Aquaculture and Forestry
PO Box 2000
Charlottetown, PE C1A 7N8

Honourable Sir:

In accordance with the Prince Edward Island Agricultural Research Investment Fund Inc. Bylaws, I enclose the report of the corporation for the fiscal year ended March 31, 2004.

This report also includes the corporation's audited financial statements for this period.

Respectively submitted,

W. Robert Morrison

Dr. Robert Morrison, Chairperson
Agricultural Research Investment Fund Inc.

Board of Directors

Dr. Robert Morrison ..... Chairperson

Dr. Tim Ogilvie ..... Vice-Chairperson

Joanne Driscoll ..... Treasurer

Dr. Trevor Lank ..... Member

John MacQuarrie/BrianDouglas ..... Member

Dr. Christiane Deslauriers/Dr. Ted VanLunen ..... Member

Gary Linkletter ..... Member

Administration

Brian Matheson ..... Program Officer

Barb Poirier/Dian Ling ..... Recording Secretary

Chairman's Report

I am pleased to submit the annual report highlighting the activities of the Prince Edward Island Agricultural Research Investment Fund (ARIF) Inc. for the 2003-2004 fiscal year.

The objectives of ARIF Inc. are to stimulate the planning and undertaking of short-term (normally three years or less) research by the private sector that has specific application to Prince Edward Island agriculture, to support research that has the potential to yield commercial and/or economic or environmental benefits to the agriculture industry (or an identifiable sector within agriculture), and to encourage the communication of research activities and results.

The corporation was managed by a seven-member board of directors representing government, research agencies and industry. The board met a total of four times during the 2003-2004 fiscal year.

There was continued interest and activity in the fund. During the past year, seven proposals were reviewed by the board. The majority of projects were from industry associations and organizations, some of which had multiple funding partners. The five proposals approved were for an ARIF commitment of $387,550.

Project subject areas were diverse and included studies relating to aphid control in potatoes, vegetable production in Prince Edward Island's climatic conditions, herbicide use patterns in cranberries, oilseeds production for novel uses and novel crops in beef finishing systems.

In the past year the Agricultural Research Investment Fund Inc. has amended the program's funding level and holdback payment policies.

The corporation's 2003/2004 fiscal expenditure for approved projects was $323,538.

Approved Projects 2003/2004

Evaluation of Garlic Barrier®, an insect repellent for control of green peach aphid (*Myzus persicae*) in potatoes (*Solanum tuberosum* L.)

Applicant:	Prince Edward Island Potato Producers Association Island Organic Farms Dr. Kris Pruski
Project Term:	3 years
Project Cost:	$19,960
Maximum ARIF Contribution:	$13,550

The green peach aphid (*Myzus persicae*), common potato aphid (*Macrosiphum euphorbiae*), and buckthorn aphid (*Aphis nasturtii*) commonly colonize potato plants in the northeastern United States and Canada. Although populations of these insects seldom reach densities high enough to cause noticeable crop injury by sap feeding, their ability to transmit plant viruses represents a serious threat to commercial potato production. The majority of recent studies undertaken to reduce green peach aphid infestations in potato plantations have been aimed at chemical control.

The objective of this project is to develop a reliable, non-chemical method to control aphids, particularly the green peach aphid (*Myzus persicae*) in seed potato production systems. At present, development of a cost effective and environmentally acceptable control method for aphids is an important issue in increasing productivity and profitability of seed potato production in Prince Edward Island and elsewhere.

Flax, Sunflower and Canola Seeds for Finishing Beef Steers

Applicant:	PEI Grain and Protein Council Inc University of Prince Edward Island (AVC)
Project Term:	1 year
Project Cost:	$80,000
Maximum ARIF Contribution:	$50,000

Research in Japan has shown that pasture-fed beef contains higher levels of the "healthy" types of fatty acids, and lower amounts of the cholesterol-raising saturated fats than grain-fed beef. Although it is not as simple to change the type of fat in beef animals (because of rumen metabolism) as it is in pigs, it is still possible to modify the fat to give it a more healthy profile.

By improving the healthy quality of locally produced beef, and ensuring that the general public is informed of this improvement, researchers anticipate the results of this project could increase consumer confidence and consumption. This will result in economic benefits to the beef sector on Prince Edward Island and a potential market will be demonstrated for producers of the new crops.

The objectives of this project are to determine if locally produced protein and fat feedstuffs newly introduced to Prince Edward Island can be used in beef cattle rations to influence the fatty acid and meat quality aspects of meat.

Trait and Performance Assessment of Vegetable Cultivars Under Prince Edward Island Climatic and Production Conditions

Applicant:	PEI Horticultural Association Inc.
Project Term:	3 year
Project Cost:	$175,200
Maximum ARIF Contribution:	$126,000

The selection of the most appropriate vegetable cultivar is a major decision for farm managers. Each cultivar is unique in appearance and production with the final performance determined by climate, soil and field conditions. Each cultivar is part of a breeding line which is best suited for certain soils, climates and markets. The cultivar's response to the climate, soil and farm production techniques it is grown under, determines the yield, maturity, quality, storage ability and overall trait characteristics. For optimal results, the cultivar breeding line, the production system and the climate of the geographical region in which it is being grown must be matched.

In the last five to seven years, the horticultural seed industry has undergone changes to its cultivar breeding approach. Worldwide, there has been an amalgamation of seed companies with breeding being carried out by only a few companies. These companies have focused their breeding programs to meet the demands of major producing areas. Thus, new breeding lines entering the market are more suited for the climates and soils of the warmer production areas and have varietal traits that best suit these major producing areas. This has resulted in cultivars entering and exiting the market place at a very fast pace. As such, the Prince Edward Island horticultural sector is facing the challenge of having to find replacements for cultivars which have ceased in commercial production.

The objectives of this project are to assess cultivar response to Prince Edward Island climatic and production conditions for broccoli, cauliflower, cabbage, head lettuce, romaine lettuce, carrot and parsnip and to identify replacement and complementary cultivars for adoption by Island producers.

Herbicide Use Patterns Compatible With IPM Programs in Cranberry

Applicant:	PEI Cranberry Growers Association Nova Scotia Agricultural College
Project Term:	3 year
Project Cost:	$234,501
Maximum ARIF Contribution:	$ 30,000

This project is based on cranberry industry demand and consultation with extension specialists on Prince Edward Island. The project will enhance the production of high-quality cranberries in a safe and environmentally conscious manner. This can be accomplished by improving on existing integrated pest management (IPM) practices and expanding the IPM tools available to cranberry producers.

The need to widen and enhance IPM programs is seen as being of paramount importance to the cranberry industry. The adoption of this technology would ease the reliance on registered chemical controls, expand grower knowledge and management choices, and respond to issues with environmental impacts. Although there are some weed control products available for use by producers within an IPM program, they do not provide the level of control desired. There is a need for safe and effective products that can be included in a weed-management program. Research must address these issues, while at the same time, provide the tools necessary for the production of a high-quality crop in a safe, environmentally conscious manner.

The objectives of this project are to identify herbicide use patterns which are compatible with integrated pest management (IPM) programs, evaluate and demonstrate new products, both chemical and biological, for weed control in cranberries; promote weed management as one part of an IPM program; and ensure that additional weed control products made available through pesticide registration are developed into an environmentally conscious and sustainable pest management program.

Identification of Oilseed Crop Potential for Prince Edward Island

Applicant:	Nova Scotia Crop Development Institute PEI Department of Agriculture, Fisheries, Aquaculture and Forestry
Project Term:	3 years
Project Cost:	$255,244
Maximum ARIF Contribution:	$168,000

Significant changes have occurred in agriculture on Prince Edward Island in the past few years. Some of these changes result from local initiatives like the report *Cultivating Island Solutions*, the enactment of the *Crop Rotations Act*, and the increasing desire to enhance the ecological and economic sustainability of Island farms. Other changes reflect the broader market forces that have impacted negatively on Island farm profitability.

Such changes have emphasized the need to diversify crops, and thereby, crop rotations on Prince Edward Island. The evaluation of oilseed crops and their production appears to represent such an opportunity. The potential of oilseeds adapted to cool, temperate climates range from high-value nutraceuticals, food, bioenergy and biobased lubricants to lower-value feed opportunities. Currently no research agency in the province or the region has a mandate to work with oilseed crops (the exception is the evaluation of soybean breeding lines at the Harrington Research Farm, where the emphasis has been on full-fat beans for livestock feed). Researchers anticipate that the results from this project will identify alternative rotational cash crops for Prince Edward Island agriculture.

The objectives of this project are to initiate work that will identifying new crop opportunities in the oilseed sector, stimulate exploitation of those opportunities, and enhance the expertise in the region concerning oilseed crops.

Completed Projects

The following projects were completed during the past year:

- *Heat-Treated Grains - An Inexpensive Source of Bypass Protein for Dairy Cattle (PEI Dairy Producers Association and Atlantic Veterinary College)*
- *Assessment of Ultrasonic Imaging at Time of Weaning as a Predictor of Carcass Traits at Slaughter (PEI Cattlemen's Association and AVC's Department of Health Management)*
- *Determining the Mechanisms Governing Floral Initiation, Pollination, and Fruit Set of Lowbush Blueberry (PEI Blueberry Growers Association, University of Prince Edward Island,*
- *Nova Scotia Agricultural College, Yeo Brothers Farms Ltd., Bragg Lumber Company, and Wild Blueberry Producers Association of Nova Scotia)*
- *Management of grass/legume stands (PEI Dairy Producers Association)*
- *Identifying Superior Bluegrass and Timothy Pasture Varieties (PEI Dairy Producers Association)*
- *Evaluation of Industrial Hemp for Adaptability to PEI (PEI Hemp Growers Association)*
- *Evaluation and Selection of Breeding Lines of Double Cut Red Clover for Wide Range of Flowering Dates (PEI Dairy Producers Association and Norwegian Crop Research Institute)*
- *An Investigation of Factors Associated with Milk Off-Flavor in PEI Dairy Herds (PEI Dairy Producers Association)*
- *Three Row Bedplanting for Potatoes (PEI Potato Producers Association)*
- *Resistance of red clover varieties to invasion of root-lesion nematodes (PEI Milk Marketing Board, PEI Potato Producers Association, and East Coast Commodities Inc.)*
- *Feasibility of a Seed Potato Production Area in PEI (Prince Edward Island Potato Board and Prince Edward Island Potato Quality Institute)*
- *Evaluation of Dayneutral Strawberry Varieties for Winter Greenhouse Production (Schurman Farm Ltd.)*

The following project was terminated:

- *Extruded Grains and Soybeans in Starter Pig Diets (Eastern Swine Club, University of Prince Edward Island and Grain Elevators Corporation)*

In summary, I wish to thank the directors for their continued commitment to the corporation and their efforts toward advances in applied and developmental research.

Respectively submitted,

W. Robert Morrison

Dr. Robert Morrison, Chairperson
Agricultural Research Investment Fund Inc.

AUDITOR GENERAL

CHARLOTTETOWN

PRINCE EDWARD ISLAND

PEI AGRICULTURAL RESEARCH INVESTMENT FUND INC.

FINANCIAL STATEMENTS

MARCH 31, 2004

AUDITOR GENERAL

CHARLOTTETOWN
PRINCE EDWARD ISLAND

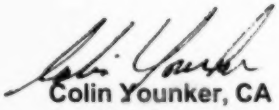
AUDITOR'S REPORT

To the Board of Directors of the
PEI Agricultural Research Investment Fund Inc.

I have audited the balance sheet of the PEI Agricultural Research Investment Fund Inc. as at March 31, 2004 and the statements of revenues, expenditures and surplus, and cash flows for the year then ended. These financial statements are the responsibility of the corporation's management. My responsibility is to express an opinion on these financial statements based on my audit.

I conducted my audit in accordance with Canadian generally accepted auditing standards. Those standards require that I plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In my opinion, these financial statements present fairly, in all material respects, the financial position of the corporation as at March 31, 2004 and the results of its operations and its cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.



Colin Younker, CA
Auditor General

Charlottetown, Prince Edward Island
May 21, 2004

STATEMENT 1

PEI AGRICULTURAL RESEARCH INVESTMENT FUND INC.

BALANCE SHEET

AS AT MARCH 31, 2004

	2004	2003
ASSETS		
Cash	$ 550,271	$ 348,468
Short-term investments - Note 2	837,363	812,155
Accounts receivable		
- Province of Prince Edward Island	-	200,000
- General	71,335	82,768
	$1,458,969	$1,443,391
LIABILITY AND SHAREHOLDER'S EQUITY		
Accrued liability	$ 243,269	$ 138,879
Shareholder's Equity		
Share capital - Note 4	100	100
Surplus - Statement 2	1,215,600	1,304,412
	1,215,700	1,304,512
	$1,458,969	$1,443,391

(The accompanying notes are an integral part of these financial statements.)

SIGNED ON BEHALF OF THE BOARD:

STATEMENT 2

PEI AGRICULTURAL RESEARCH INVESTMENT FUND INC.

STATEMENT OF REVENUES, EXPENDITURES AND SURPLUS

FOR THE YEAR ENDED MARCH 31, 2004

	2004	2003
Revenues		
Provincial grant	$ 200,000	$ 200,000
Interest revenue	34,726	30,781
	234,726	230,781
Expenditures		
Administration	4,184	5,044
Research projects	319,354	155,352
	323,538	160,396
Excess revenues (expenditures) for the year	(88,812)	70,385
Surplus, beginning of year	1,304,412	1,234,027
Surplus, end of year	$1,215,600	$1,304,412

(The accompanying notes are an integral part of these financial statements.)

PEI AGRICULTURAL RESEARCH INVESTMENT FUND INC.

STATEMENT OF CASH FLOWS

FOR THE YEAR ENDED MARCH 31, 2004

	2004	2003
CASH FLOW FROM OPERATING ACTIVITIES		
Receipts from Province of PEI	$400,000	$400,000
Payments to projects	(201,230)	(198,577)
Payments for administration expenses	(6,689)	(2,539)
Purchase of investments	-	(790,589)
Interest received	9,722	8,580
NET INCREASE (DECREASE) IN CASH	201,803	(583,125)
CASH		
Balance, beginning of year	348,468	931,593
Balance, end of year	$550,271	$348,468

(The accompanying notes are an integral part of these financial statements.)

PEI AGRICULTURAL RESEARCH INVESTMENT FUND INC.

NOTES TO FINANCIAL STATEMENTS

MARCH 31, 2004

1. Operations

The PEI Agricultural Research Investment Fund Inc. was incorporated on March 31, 1995 under Part 1 of the Companies Act. The main objective of the corporation is to provide funds for agricultural research in the Province.

2. Short-Term Investments

Short-term investments are interest bearing investments that are carried at cost plus accrued interest. Since these investments are held for a short period of time, their market value approximates their carrying value.

3. Commitments

In addition to the accrued liability, the corporation has approved five research projects providing for future commitments of:

April 1, 2004 to March 31, 2005	$161,850
April 1, 2005 to March 31, 2006	95,350
	$257,200

4. Share Capital

The corporation has authorized 5,000 common shares with a $1 par value. As at March 31, 2004 there were 100 common shares issued and outstanding. The Government of Prince Edward Island, as represented by the Minister of Agriculture, Fisheries, Aquaculture and Forestry, is the sole shareholder.

5. Provincial Administrative Expenses

Costs incurred by the Department of Agriculture, Fisheries, Aquaculture and Forestry on behalf of the PEI Agricultural Research Investment Fund Inc. in administering this fund are not reflected in the financial statements. These costs include salary and related employee benefits, office accommodations, and miscellaneous administrative expenses.

6. Comparative Figures

Certain 2003 financial statement figures, presented for comparative purposes, have been reclassified to conform with 2004 financial statement presentation.